



# EXERCISE 17

## MATTER AND MATERIALS

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1 Study the following substances: copper, silver, iron, steel, plastic, rubber, wood and wool. Choose a substance or substances that will be suitable for the following uses:

1.1 Pipes

**Copper, iron, steel, plastic**

1.2 Electromagnets

**Iron**

1.3 Bridges

**Iron, steel, wood**

1.4 Three-legged pot

**Iron**

1.5 Cover for electrical wires

**Plastic**

1.6 Garden furniture

**Iron, plastic, steel, wood, aluminium**



1.7 Jewellery

**Copper, silver, steel,  
plastic and wood**

1.8 Handles for pots

**Rubber, wood, plastic**

1.9 Clothing

**Wool, plastic (raincoat)**

1.10 Cutlery

**Iron, steel, plastic, silver**

1.11 Diving suit

**Rubber**

1.12 Soles of shoes

**Rubber, wood (wooden  
clogs), plastic**



2 What is a ferromagnetic substance?

**It is a substance which is a good magnetic material.**

**It is a substance that is attracted by a magnet.**



3 What are the following types of substances used for:

3.1 Good thermal conductor

**Cooking utensils, e.g. pots, pans, and stove plates**

3.2 Insulators

**To insulate electrical wires, handles of pots and pans.**

3.3 Ferromagnetic material

**To make magnets.**



4 Test, using a fridge magnet, whether the following items are magnetic or non-magnetic:

<b>Material</b>	<b>Magnetic/non-magnetic</b>	<b>Material</b>	<b>Magnetic/non-magnetic</b>
Mirror	<b>4.1 Non-magnetic</b>	Bodywork of car	<b>4.4 Magnetic</b>
Fridge door	<b>4.2 Magnetic</b>	Handle of door	<b>4.5 Non-magnetic /magnetic</b>
Security gate	<b>4.3 Magnetic</b>	Window pane	<b>4.6 Non-magnetic</b>



5 Complete the diagram:



## Pure substances

5.1 Compounds

5.2 Elements

5.3 Examples:  
H<sub>2</sub>O, NaCl or any  
other compound

5.4 Examples:  
Na, Fe, O<sub>2</sub> or any  
other element



6 Define the following:

6.1 Compound

**It is a substance that consists of two or more elements chemically bonded to each other in a specific ratio.**



6.2 Pure substance

**It is a substance made of one type of particle.**

6.3 Element

**An element is a substance that cannot be broken down into simpler substances by chemical means.**



7 Complete the following table by classifying the substances as elements or compounds:



	<b>Description</b>	<b>Element/compound</b>
7.1	Iron	<b>Element</b>
7.2	Epsom salts	<b>Compound</b>
7.3	Table salt	<b>Compound</b>
7.4	Copper	<b>Element</b>
7.5	Swimming pool acid	<b>Compound</b>